ABSTRACT

A packet switching network including subscriber stations connected to each other through at least one switch, which has a behavior defined as deterministic in that any packet sent on the network from a source subscriber station joins the destination subscriber station(s) within a limited time. In the packet switching network each output port from each switch on the network satisfies the relationship:

$$i\ number\ of\ virtual\ links\ passing\ through\ the\ buffer \quad \left[1 + int\left(\frac{(Jitter\ In)_i\, i + \max Latency}{BAGi} \right) \right] *$$

$$(max\ frame\ duration) \leq latency$$

in which: the max latency value is a maximum residence time in an output buffer of a switch, this value may be different for each switch in the network, BAGi is a minimum time between two consecutive frames belonging to a virtual link i, before they are transmitted, (Jitter In) i is Jitter associated with a virtual link i that represents a time interval between a theoretical instant at which a frame is transmitted, and its effective transmission that may be before or after the theoretical instant, and (max frame duration) i is a duration of a longest frame on the virtual link i.